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NEIL ARNOTT, M.D. F.R.S.

Willis Esq with Dr Taylor's kind regards

[From the OBITUARY NOTICES of the PROCEEDINGS OF THE ROYAL SOCIETY,
No. 175, 1876.]

Dr. NEIL ARNOTT was born at Arbroath, in Scotland, on the 15th May 1788, and died in London on the 2nd March, 1874. He passed his childhood at Upper Dysart, and began his education partly with his mother, a woman of great energy and ability, and partly in the parochial school of Lunan, near Arbroath. From his earliest years he gave great attention to all natural objects around him, and in after life he often referred to the experience thus acquired as his introduction to the phenomena of the physical world.

Neil Arnott entered the Aberdeen Grammar School in November 1798, and he continued there three years. He went into the Bursary Competition at Marischal College at the beginning of the session of 1801. He was then thirteen, and older than the average of boys at the same stage in the school. He came in sixth, and was entered a student of Marischal College, where he went through the accustomed course of four sessions, devoting his time to the study of the classics and mathematics, to civil and natural history, as well as chemistry, botany, and zoology.

In the third year of the curriculum he took up the subject of Natural Philosophy, which appears to have had for him an absorbing interest. The Professor in the University was Patrick Copland, a man gifted with remarkable powers of elucidating the phenomena of the science by experiments, and of attracting and fixing the attention of his young pupils. Among these none profited so much by Copland's lectures as the subject of this memoir. In this department Neil Arnott felt himself thoroughly at home, and, aided by the friendly counsel and encouragement of the Professor, he made great and rapid progress. He carried away full notes of these lectures, and turned them to account in his after studies. In other points, too, he benefited greatly by Copland's instructions, *i.e.* in selecting from daily life familiar illustrations of natural phenomena, and in the invention and construction of the most simple forms of apparatus for the purpose of experimental demonstration. After a successful career of study, Neil Arnott obtained his M.A. degree in the year 1805.

He selected the medical profession for his future career, and commenced the study of medicine in Aberdeen, where it was known that he had worked hard in order to qualify himself for entering one of the London Hospital Schools. His wishes in this respect were soon gratified. He arrived in London on the 29th September, 1806, when in his nineteen year, and entered as a pupil at St. George's Hospital, under Sir Everard Home. Through the influence of Sir Everard he, at a later period, obtained an appointment as surgeon in the East-India Company's medical service. Much of the experience of sea-life which he thereby obtained he afterwards turned to good account in preparing the work by

which his name is so well known to the scientific world,—the ‘Elements of Physics.’ Numerous observations on the waves, currents, tides, winds, and storms, and on the depth and colour of the sea were made by him, and afterwards incorporated in the chapters of this work. He left England on his first voyage to China in 1807, before he had completed his nineteenth year, and after a disastrous course, which took him across the Atlantic to Rio, he landed at the Cape of Good Hope. He there ascended the Table Mountain and made those meteorological observations which are recorded in the ‘Physics.’ He returned to London in 1809, and made a second voyage to China in 1810.

It was during these voyages, and when in charge of troops, that his attention was specially directed to sanitary matters : ventilation, warmth, clothing, food, air, and exercise were subjects which came before him in a practical form, and many ingenious contrivances were resorted to by him in order to restore and maintain in a healthy condition the invalided men who had been placed under his care. He was so successful in these efforts that he lost during the voyage home only one man who was hopelessly diseased, and on his return he received the thanks of the military authorities.

In 1811 he commenced practice in London, in Hunter Street, Brunswick Square. He was acquainted with the French, Spanish, and Italian languages ; and he had among his patients a large number of foreign refugees who resided in that neighbourhood. He obtained the diploma of the College of Surgeons in 1813. Although fully engaged in medical practice, Neil Arnott’s mind was still much directed towards chemistry and physics, and in this year he gave at the Burton Rooms a course of lectures on Natural Philosophy applied to Medicine. The novelty and utility of this course rendered it highly attractive to medical men. At a later date (1825), when residing in Bedford Square, he gave two courses of lectures on the same subject, chiefly to members of the medical profession. He declined, however, to continue these courses ; and in the year 1827 he published the substance of them in his ‘Elements of Physics.’

In 1814 the University of Aberdeen conferred upon him the degree of M.D. He practised for many years as a physician, and held the appointments of physician to the French and Spanish Embassies. As a physician Dr. Arnott placed more confidence in regimen than he did in drugs. He made many useful mechanical suggestions for the treatment of certain diseases, such as hernia, stricture, &c. It was from 1838 to 1855 that he was in the height of his professional career. He then withdrew from practice, and devoted his time almost exclusively to scientific subjects, including also those of a sanitary nature. In this year he published an account of his smokeless grate, a modification of the open fire-grate, but possessing many of the advantages of the stove. This invention included a complete combustion of smoke and a great

economy of fuel with a steadiness and endurance of the fire. It was in reference to this invention that in 1854 the Rumford Medal of the Royal Society was awarded to Dr. Arnott.

In 1832 he first made known the use of the Hydrostatic or Water-bed, which has proved of such important service in medical practice. Devoting his attention to sanitary appliances, including the proper methods of warming and ventilating dwelling-houses, hospitals, and infirmaries, he introduced the stoves which are well known by his name. In his essay on "Warming and Ventilation," published in 1838, he gave a full description of his stove. For this and other novel appliances in the treatment of disease and the preservation of public health, the Jurors of the Universal Exposition of Paris, in 1855, awarded to him a Gold Medal, to which the Emperor Napoleon III. added the Cross of the Legion of Honour.

On the foundation of the University of London, in 1836, Dr. Arnott was appointed one of the original Members of the Senate. In 1837 he was named one of the Physicians Extraordinary to Her Majesty, and in the following year he was elected a Fellow of the Royal Society. In 1854 he was requested by the President of the General Board of Health to become one of the Medical Council; and it was at this period that he devoted a large portion of his time to education and public works.

As the inventor of the "Arnott Stove," the "Arnott Ventilator," and the Water-bed, it is not likely that his name will soon be forgotten; but it deserves to be recorded in his honour that he refused to patent any of his inventions. His great object through life was to benefit others, and not to obtain pecuniary profit. Sir Arthur Helps, in one of his later works, says truly of Dr. Arnott, "His whole life was given to the service of his fellow men. A truer reformer in the best sense of the word never existed." One great secret of Dr. Arnott's success as a writer on natural philosophy was, that from his earliest days he was an acute observer of all that went on around him. Nothing bearing upon physics escaped his notice. In addition to this faculty of observation he possessed happy powers of description. The reader was not only instructed, but made to feel a deep interest in the subject. Instruction was thus rendered a pleasing recreation. His earnest wish was to make the path of learning easy to all; and the reception of his 'Elements of Physics,' the first edition of which appeared in 1827, is a proof of his success in this respect. There are few educated men of the past generation who will not remember the interest with which they read the first volume of this excellent work; and it is not too much to say that the learned and the unlearned, the student and the philosopher, have benefited by its perusal. This work did more for the encouragement of the study of Natural Philosophy than all the works on the subject which had preceded it. Within five years of its publication five large editions were called for, and, although not then complete, it was reprinted in America and

translated into several foreign languages. In November 1829 appeared the first part of the second volume. The work underwent six editions during the life of the author, and a posthumous seventh edition has lately appeared.

In 1861 he published his 'Survey of Human Progress,' and this was followed by various monographs on educational subjects.

In 1856 Dr. Arnott married the widow of one of his oldest friends, Mr. Knight. This lady was the daughter of James Hunt Holley, Esq., of Bleckling, in Norfolk. She was an accomplished woman, and the match was in every way suitable. She survived her husband upwards of two years. She had the same philanthropic and educational views, and lived to carry out his intentions in reference to the endowment of the Scotch Universities. The desire of both was to encourage the study of Natural Philosophy. In 1869 Dr. Arnott granted to the University of London £2000, and to each of the four Universities of Scotland (Aberdeen, Edinburgh, Glasgow, and St. Andrews) £1000, while, subsequently to his death, Mrs. Arnott granted an additional sum of £4000 to be divided among these Universities. Thus within the period of seven years Dr. and Mrs. Arnott had contributed the sum of ten thousand pounds for the promotion of scientific knowledge.

Dr. Arnott was a man of genial disposition, and had a large circle of friends. He took a delight in the society of these friends and in the progress of scientific research, until the infirmities of age compelled him in a great measure to withdraw from social intercourse.

He died in the 86th year of his age, and up to the last year of his life his mind was still actively occupied in devising and maturing new projects or inventions. Among these may be mentioned a chair-bed for the prevention of sea-sickness and a floating breakwater. It was the delight of his life to devise means of ameliorating suffering and adding to human comfort.

Dr. Arnott died in the Roman Catholic faith, and by his own desire his body was buried in the Dean Cemetery, at Edinburgh, in the grave in which the remains of his mother and other members of his family are deposited. An obelisk with an appropriate inscription in commemoration of himself and them has been erected over the grave.

